

REMARKS/ARGUMENTS

Favorable reconsideration of this Application, as presently amended and in light of the following discussion, is respectfully requested.

This Amendment is in response to the Office Action mailed on March 31, 2005.

Claims 10-35 are pending in this Application and stand rejected. Claims 14, 16, 17, 19, 25, and 29-32 are amended and Claim 23 is cancelled without prejudice or disclaimer by the present Amendment.

In the outstanding Office Action, Claims 10, 14, 16-18, 23-26, 30, 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Berlin (U.S. Patent No. 5,572,990) in view of Teder (U.S. Patent No. 3,633,705); Claims 19, 20, 33 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Berlin view of Teder, and in further view of Bolnberger et al. (U.S. Patent No. 4,718,415, hereinafter “Bolnberger”); Claims 13 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Berlin in view of Teder and in further view of Cappa et al. (U.S. Patent No. 4,961,420, hereinafter “Cappa”); Claims 15 and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Berlin in view of Teder and in further view of Ansite et al. (U.S. Patent No. 3,910,269, hereinafter “Ansite”); Claims 21, 22 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Berlin in view of Teder and in further view of Berman (U.S. Patent No. 3,314,424).

Applicants thank Examiner Darwin Erezo for the courtesy of a telephonic interview extended to Applicants’ representative on June 8, 2005. During the discussion, Applicants’ representative requested clarification on the rejection of Claim 25 because the outstanding Office Action failed to explain what element in Berlin corresponded to the body recited in that claim. During the telephonic interview, Examiner Erezo explained that in the rejection

of Claim 25, the printed circuit board 48 and the wires of the microphone 50 connected to the printed circuit board 48 in Berlin were considered, respectively, the body and arm recited in Claim 25.

Applicants thank Examiners Darwin Erezo and Glenn Dawson for the courtesy of an interview extended to Applicants' representative on July 27, 2005. During the interview, amendments to the claims as herein presented were proposed, and arguments as hereinafter developed were presented. An agreement with respect to the claims was not reached, but Examiner Erezo noted in the interview summary (form PTOL 413) that:

(1) as to claim 17, it was argued that Berlin fails to teach an arm that extends from the housing. Though it was agreed by both Examiners that element 48 (circuit board) by itself is not an arm that extends from the housing, it is still uncertain if the combination of the arm and the means for supporting the microphone on to the circuit board can be viewed as an arm;

(2) as to claim 25, it is the Examiner's position that the means for supporting the microphone onto the circuit board is equivalent to an "arm";

(3) As to new claim 36, it does not appear that the Teder reference could be used to modify the Berlin reference since there is no motivation to put a tubular conduit over and around two microphones; and

(4) as to the potential 112 problem, the applicant should be careful when positively claiming the arrangement of the arm, specifically to the arm extending away from housing. In this instance, it would be a 112 problem if a dependent claim also recites the arm extending way or connected to a body, instead of a housing."

Claim 25 has been amended to recite the subject matter of the new claim discussed during the interview, including the recitation of the two-microphone features previously recited in claim 32. In addition, presently amended Claim 25 takes into consideration the potential 112 problem raised during the interview by the Examiners. Claim 17 has also been

amended to recite the two-microphone feature previously recited in Claim 16. Non-limiting support for the subject matter amended to the claims is found on the subject matter originally recited in Claims 16 and 32 and on Applicants' originally filed figures. Therefore, the presently amended claims are not believed to raise a question of new matter.¹

Based at least on the agreement reached during the interview that there is no motivation to modify Berlin with Teder to put a tubular conduit over and around two microphones, Applicants respectfully submit that the above-summarized rejections are now moot. For the record, because Applicants believe that there are other problems with the outstanding rejections, Applicants summarize below the additional arguments presented during the personal interview.

According to a feature of the invention as set forth in the presently amended Claim 17, an oxygen breathing mask is recited, comprising, among other features, *a housing on an inner surface of a flexible cap, first and second microphone capsules*, a conical tubular mouth-piece, and *an arm extending from the housing supporting the tubular mouth-piece*. Presently amended Claim 25 recites a body disposed in the housing from which the arm extends to support the conical tubular mouth-piece.

As explained in Applicants' specification, one of the advantageous features of the present invention is the improved acoustic performance of the mask by concentrating the useful acoustic emissions on the microphone capsule with reduced saturation and limited influence of external noises, such as the opening and closing of valves related to oxygen intake and gas exhalation, while, at the same time, simplifying the manufacturing process of

¹ See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

the mask.² In addition, as further explained in Applicants' specification, the use of at least two microphones allows the user to use at least one of them for voice command system.³

In Berlin, a respiratory mask 10 disposed inside a protective helmet 12 comprises an inner mask 22, a connecting member 26 with an air inlet projection 28, and a voice channel 30 in communication through a voice aperture 34 with an inner mask cavity 36. A printed circuit board 48 with printed conductors on both sides is disposed so as to cover completely the voice aperture 34. On the side of the printed circuit board 48 facing the inner mask cavity 36, first and second microphones 50, 52 and electronic components 54, 56 are connected to the conductors of the printed circuit board 48. The two microphones 50, 52, which are directional microphones, are so located, spaced apart and diametrically opposite each other, that their directional patterns are perpendicular to each other. The first microphone 50 preferentially picks up background noise and speech. In contrast the higher positioned second microphone 52 oriented toward the inhalation valves 24 picks up mainly noise or background noise. The output signals of the two microphones 50, 52 are processed in phase opposition in order to separate the breathing noise from the speech and thereby obtain excellent voice reproduction.⁴

Applicants respectfully submit that Berlin and Teder, neither individually nor in any combination thereof, support a *prima facie* case of obviousness of the invention recited in Claims 17 and 25. This is so for at least two reasons. First, even when combined, these references do not teach or suggest all the claimed features. Secondly, there is no motivation to combine references. It has already been agreed that there is no motivation to modify Berlin to cover both microphones therein with the mouth-piece of Teder.

² See, for example, specification, page 2, line 33 – page 3, line 7.

³ *Id.*, page 5, lines 27-30.

⁴ Berlin, col. 4, line 41 - col. 6, line 64.

The outstanding Office Action asserts that in Berlin (1) the respiratory mask 10 is a flexible cap; (2) the connecting piece 39 is a housing; (3) the microphone 50 is a microphone capsule; and (4) the printed circuit board 48 is an arm. The outstanding Office Action also notes that Berlin fails to disclose a microphone capsule mounted on a conical tubular mouthpiece and cites Teder to remedy that deficiency.

Applicants respectfully disagree with the interpretation that the printed circuit board 48 of Berlin is the arm recited in Claims 17 and 25. Although claims must be given their broadest *reasonable* interpretation during prosecution, that interpretation must be consistent with the specification and with interpretation that those skilled in the art would reach. Absent a specific definition, the words of the claim must be given their plain and ordinary meaning.⁵

A dictionary definition of an arm includes “something like or corresponding to an arm; or a slender part of a structure, machine, or an instrument projecting from a main part, axis, or fulcrum.”⁶ As a non-limiting example, Applicants’ FIGS. 2 and 3 illustrate the claimed arm. Applicants respectfully submit that the printed circuit board 48 of Berlin is a disk⁷ containing electronic circuits and connectors, as explained hereinabove, and not an arm. Those of ordinary skill in the art would not consider a printed circuit board containing electronic circuits and connectors as an arm to support a tubular mouthpiece as recited in Claims 17 and 25. In addition, contrary to what was asserted in the Office Action, the printed circuit board 48 does not extend from the connecting piece 39, but is mounted flush at the exit thereof as clearly shown in FIGS. 2 and 3 of Berlin.

Therefore, an assertion that element 48 of Berlin is an arm disregards the teachings of that reference, the plain and ordinary meaning the word, and the interpretation that those of

⁵ See, MPEP § 2111.

⁶ See, for example, The Merriam-Webster Dictionary on line.

⁷ See, Berlin, col. 5, lines 22-29 and FIG. 4 of Berlin.

ordinary skill in the art would give to the terminology recited in Applicants' Claims 17 and 25. Teder, being cited as disclosing a tubular mouthpiece, does not remedy that deficiency of Berlin. As such, Berlin and Teder, neither individually nor in any combination, can support a *prima facie* case of obviousness of Claims 17 and 25.

In addition, even if assuming *in arguendo* that the printed circuit board 48 of Berlin is the arm recited in Claims 17 and 25, Applicants respectfully traverse the obviousness rejection based on Berlin and Teder because there is insufficient evidence for a motivation to modify the respiratory mask of Berlin by incorporating mouthpiece disclosed by Teder for the following reasons.⁸

The outstanding Office Action states that the proposed modification would have been obvious because "having a conical tubular mouthpiece reduces the level of background noise picked up without decreasing the response of the microphone." The record, however, fails to provide the required evidence of a motivation for a person of ordinary skill in the art to perform such modification.

While the Teder patent may provide a reason for using a mouthpiece in the disclosed noise-canceling microphone, it does so for a given acoustical environmental and the Teder patent fails to suggest why a person of ordinary skill in the art would be motivated to incorporate such a feature in a respiratory mask such as the one disclosed in the Berlin patent. In particular, the Teder patent uses a mouth-piece assembly 18 that comprises a differential, or outer, diaphragm 26, which includes a perforated conical base member 28 attached to the end of an acoustic tube 10 and a circular perforated end plate 30, connected to an inner

⁸ See MPEP 2143.01 stating "[o]bviousness can only be established by combining or modifying the teaching of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art," (citations omitted). See also MPEP 2144.08 III stating that "[e]xplicit findings on motivation or suggestion to select the claimed invention should also be articulated in order to support a 35 U.S.C. 103 ground of rejection. . . Conclusory statements of similarity or motivation, without any articulated rational or evidentiary support, do not constitute sufficient factual findings."

diaphragm 24. Such a mouth-piece assembly is used for a noise-canceling microphone of the type that utilizes a hollow, sound conducting acoustic tube 10 that extends between a mouthpiece mounted on one end of the tube and an electro-acoustic transducer 20 mounted on the other end of the tube. In this differential diaphragm system, the inner diaphragm 24 seals off the end of the acoustic tube 10.⁹ The Teder patent, however, does not suggest that the mouthpiece assembly 18 would work in a respiratory mask such as the one disclosed by Berlin, much less “reduce the level of background noise picked up without decreasing the response of the microphone.” Those of ordinary skill in the art understand that the acoustical environments in Teder and Berlin are clearly different and the Office fails to support with substantial evidence the assertion that the benefit disclosed by Teder would be realizable in the mask of Berlin.

In addition, the Berlin patent is not concerned with microphones of the type which utilizes a hollow, sound conducting acoustic tube that extends between a mouthpiece mounted on one end of a tube and an electro-acoustic transducer mounted on the other end of the tube. Instead, the Berlin patent is concerned with a respiratory mask having two directional-pattern microphones mounted on a printed circuit board that takes the place of a conventional voice diaphragm. As explained hereinabove, the Berlin patent states that its structure already achieves the goal of separating background noise from speech.¹⁰ The Berlin patent does not suggest that further improvement is desired, or that another feature should be added to further improve the reduction on the level of background noise. In particular, the Berlin patent does not suggest adding a mouthpiece assembly, such as those disclosed in the Teder patent.

⁹ See the Berlin patent, for example, at col. 1, lines 4-8 and FIGS. 1-4.

¹⁰ See the Berlin patent, for example, at col. 6, lines 55-58.

The Berlin and Teder patents, therefore, do not provide the motivation to perform the proposed modification of the Berlin device. In other words, an attempt to bring in the isolated teaching of Teder's mouthpiece assembly into the Berlin device would amount to improperly picking and choosing features from different references without regard to the teachings of the references as a whole.¹¹ While the required evidence of motivation to combine need not come from the applied references themselves, the evidence must come from *somewhere* within the record.¹² In this case, the record fails to support the proposed modification of the Berlin system.

The U.S. Court of Appeals for the Federal Circuit recently vacated a rejection under 35 U.S.C. 103(a) based on similar grounds.¹³ In vacating a rejection, the Court stated:

The record reflects that the examiner and the Board have managed to find motivation for substituting one type of memory for another *without providing a citation of any relevant, identifiable source of information justifying such substitution*. The statements made by the Examiner, upon which the Board relied, amount to no more than conclusory statements of generalized advantages and convenient assumptions about skilled artisans. At least under the MPEP then in effect, such statements and assumptions are inadequate to support a finding of motivation, which is a factual question that cannot be resolved on "subjective belief and unknown authority." *Lee*, 277 F.3d at 1344. Under such circumstances, with respect to core factual findings, "the Board **must point to some concrete evidence in the record in support**" of them, rather than relying on its assessment of what is "well recognized" or what a skilled artisan would be "well aware." (emphasis added)

¹¹ See In re Ehrreich 590 F2d 902, 200 USPQ 504 (CCPA, 1979) (stating that patentability must be addressed "in terms of what would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the sum of all the relevant teachings in the art, not in view of first one and then another of the isolated teachings in the art," and that one "must consider the entirety of the disclosure made by the references, and avoid combining them indiscriminately.")

¹² In re Lee, 277 F.3d 1338, 1343-4, 61 USPQ2d 1430 (Fed. Cir. 2002) ("The factual inquiry whether to combine references ... must be based on objective evidence of record. ... [The] factual question of motivation ... cannot be resolved on subjective belief and unknown authority. ... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion").

¹³ In re Beasley, 2004 U.S. App. LEXIS 25055 (Fed. Cir. December 2004)

The Office is respectfully reminded that the fact that the Berlin respiratory mask could be modified to arrive at the claimed oxygen breathing mask is insufficient to establish a *prima facie* case of obviousness.¹⁴ In addition, it is not clear from the record how the mouthpiece assembly of Teder could be incorporated into the Berlin device. Under such a modification, the surface of the printed circuit board facing the inner region 36 (the asserted second end of the arm recited in Claims 17 and 25) would have to support this mouthpiece assembly. Applicants respectfully submit that those of ordinary skill in the art would not attach a mouthpiece assembly to the face of a printed circuit board containing delicate circuitry and electronic components. Such modification would require a substantial reconstruction or redesign of the elements of the Berlin device, and/or would change the basic principle of operation thereof. There is no evidence that a person of ordinary skill in the art would be motivated to perform such changes and redesign.¹⁵ Furthermore, it is not clear from the record whether such modification would actually reduce the level of background noise in the respiratory mask of Berlin.

The above-described problem with the suggestion to modify Berlin with the mouthpiece assembly of Teder is further exacerbated when considering Claim 25. As learned during the telephonic interview, as applied to Claim 25, the lead wires that hold the microphone 50 to the printed circuit board 48 would be considered the recited arm. It is clear that no one of ordinary skill in the art would consider using wires connecting a microphone to a printed circuit board as a means to support a mouthpiece assembly.

¹⁴See MPEP 2143.01 stating that the “fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness”; see also same section stating “[a]lthough a prior art device ‘may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so,’” (citation omitted).

¹⁵ See In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (reversing an obviousness rejection where the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.”)

In rejecting a claim under 35 U.S.C. 103(a), the USPTO must support its rejection by "substantial evidence" within the record,¹⁶ and by "clear and particular" evidence¹⁷ of a suggestion, teaching, or motivation to combine the teachings of different references. As discussed above, there is no substantial evidence, nor clear and particular evidence, within the record of motivation for modifying the respiratory mask of Berlin by incorporating the mouthpiece assembly of Teder. Without such motivation and absent improper hindsight reconstruction,¹⁸ a person of ordinary skill in the art would not be motivated to perform the proposed modification, and Claims 17 and 25 are believed to be non-obvious and patentable over the applied prior art.

Turning now to the other obviousness rejections based on the combination of Berlin and Teder with other references, as to the rejection of Claims 19, 20, 33, and 34, Bolnberger has been cited for assertedly disclosing a microphone having particular acoustic characteristics. As to the rejection of Claims 13 and 29, Cappa was cited for assertedly disclosing a baffle attached to a cap positioned above an exhalation port. As to Claims 15 and 31, Ansite was cited for assertedly disclosing a mask having a plurality of catches. And finally, as to Claims 21, 22 and 35, Berman was cited for assertedly disclosing a microphone with adjustable height.

Claims 10-16 and 18-24 and Claims 26-35 depend from Claims 17 and 25, respectively, thus incorporating by reference all of the features of those claims. Applicants

¹⁶ In re Gartside, 203 F3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000) (holding that, consistent with the Administrative Procedure Act at 5 USC 706(e), the CAFC reviews the Board's decisions based on factfindings, such as 35 U.S.C. § 103(a) rejections, using the 'substantial evidence' standard because these decisions are confined to the factual record compiled by the Board.)

¹⁷ In re Dembicza, 175 F3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, although 'the suggestion more often comes from the teachings of the pertinent references.' The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular.") (emphasis added).

¹⁸ See MPEP 2141, stating, as one of the tenets of patent law applying to 35 USC 103, that "[t]he references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention."

respectfully submit that the combination of Berlin and Teder with Bolnberger, Cappa, Ansite, or Berman does not remedy the lack of teaching or motivation to combine Berlin and Teder already discussed. As such, it is respectfully submitted that Claims 10-16, 18-24, and 26-35 are patentable over the cited combinations of references at least in view of their dependency from either Claim 17 or Claim 25.

Accordingly, based on the results of the personal interview and the above-noted remarks, withdrawal of the rejection of Claims 10-35 under 35 U.S.C. §103(a) is respectfully requested.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 10-35 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representatives at the below listed telephone number.

Respectfully submitted,

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